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FINANCE AND DEBT IN THE SPACE SECTOR–HISTORICAL ANALYSIS AND THE WAY FORWARD

Abstract

Financing is a critical part of the economy because it accelerates the pace of development and enables investment today based on the projected prosperity of tomorrow. Debt Financing is a deeper extension of this principle, utilizing leverage to magnify the effect of equity investment through the creation of credit. Today, most of the economy relies on credit. In 2020, for every dollar of real 'money', there were about $14 of credit in the US. These loans not only accelerate the velocity of money they functionally expand the size of the economy. Given the overwhelming impact of credit, this paper investigates why the space sector has almost no direct access to debt financing and is instead reliant on highly capital-intensive sources like venture capital, special purpose acquisition companies (SPACs), and billionaire angel investors.

To better evaluate the development path for the space sector, this paper examines several historical examples from when humanity created a new industry or expanded into a new region, including the development of railroads, electricity, colonization, aviation, and more recently the rise of the internet. Each of these sectors experienced intense waves of development, transitioning in step through a series of complex financial evolutions from niche products to global standards.

To parse all this data, this paper analyzes several characteristics of the businesses in their historical context including the four-stage development cycle; industry role as infrastructure, service, or application; and company size and longevity. The focus is on the use of debt as a financial tool and the best practices for underwriting risk in new sectors in conjunction with the commoditization of assets. This analysis uses several relevant key performance indicators including percent of market cap, interest coverage ratios, and valuation of collateral.

The result of this investigation is an evaluation of the current state of finance for both 'new' and 'old' space companies providing guidance on the best practices for increasing the amount and quality of debt financing available for the commercialization of space. Also, a specific investigation into which financial mechanisms would be most useful for expanding companies today and their limitations. The space sector is projected to grow dramatically in the next decades and to maintain the growth seen in the last decade we need to access the much larger financial tools available than can be found in the small world of venture capital.